

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Maki et al.

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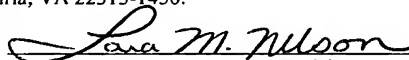
Group: Unassigned

Title: WEB-CONTENTS RECEIVING SYSTEM
AND APPARATUS FOR PROVIDING AN
ACCESS POINT

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as first-class mail on October 30, 2003 in an envelope addressed to the Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450.

Signed:


Lara M. Nelson

COMMUNICATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The above-referenced application claims priority of Provisional Application No. 60/427,735, which was originally filed on November 19, 2002 in Japanese. Enclosed herewith is the English translation of that Provisional. Also enclosed is a Certification of Translation. Please enter these documents in the file.

Should the Examiner have any questions concerning this matter, the undersigned can be reached at the telephone number set out below.

Respectfully submitted,
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PATENT

Attorney Docket No. MES1P076P

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: : GROUP:
Makoto Maki and : APPLICATION PROCESSING
Takashi Ishidoshiro : AND CORRESPONDENCE BRANCH

SERIAL NUMBER: 60/427,735

FILED: November 19, 2002 :

TITLE: WEB-CONTENTS RECEIVING SYSTEM AND APPARATUS FOR PROVIDING
AN ACCESS POINT

CERTIFICATION OF TRANSLATION

Honorable Commissioner of Patents & Trademarks
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Takashi Shimoide, a translator with the firm of MEISEI
INTERNATIONAL PATENT FIRM with a business address of Mitsui-Sumitomo
Bank Building 7F, 18-19, Nishiki 2-chome, Naka-ku, Nagoya, 460-0003
Japan,

declare:

1. that I am very familiar with both the Japanese and
English languages;

2. that I translated the attached document identified as
corresponding to the United States Patent application, Serial
Number 60/427,735, filed November 19, 2002, entitled WEB-CONTENTS
RECEIVING SYSTEM AND APPARATUS FOR PROVIDING AN ACCESS POINT from
Japanese to English;

3. that the attached English translation is a true and
correct translation of the document described above to the best of
my knowledge and belief; and

4. that all statements made of my own knowledge are true and
that all statements made on information and belief are believed to
be true, and further that these statements are made with the
knowledge that willful false statements and the like are punishable
by fine or imprisonment, or both, under 18 USC 1001, and that such
false statements may jeopardize the validity of the application or
any patent issuing thereon.

Date: October 21, 2003

By: _____

Takashi Shimoide



**[TITLE OF THE INVENTION] WEB-CONTENTS RECEIVING
SYSTEM AND APPARATUS FOR PROVIDING AN ACCESS POINT
[DETAILED DESCRIPTION OF THE INVENTION]**

[0001]

5 [Field of the Invention]

The present invention relates to a content reservation and pickup technique of reserving acquisition of a content via the Internet through an access from a predetermined terminal to one access point and picking up the reserved content through an access
10 from the predetermined terminal to another access point located apart from the one access point.

[0002]

[Prior Art]

Access points as radio relay stations for a wireless LAN are
15 used as the device of connecting multiple computers at separate locations to the Internet not only in the places where specific people continuously act, such as homes and offices (hereafter referred to as private spaces), but in the places where general public temporarily act, such as hotels, airports, shopping malls,
20 parks, and stations (hereafter referred to as public spaces). One proposed technique connects an access point located in a public space with a broadband line, which ensures high-speed Internet access services, such as an xDSL line or a CATV line, and gives a space for Internet access (hereafter referred to as a free spot) to the
25 general public in a coverage of radio wave transmitted from the access point (radio communication area) (for example, see non-paten reference 1). The administrator of the public space is authorized to use a certain broadband line. The broadband line is open to terminals possessed by the respective users of the public
30 space via the access point for the wireless LAN. This enhances the

convenience of the user's Internet access and increases the utilization rate of the public space.

[0003]

[Non-Patent Reference 1]

5 FREESPOT Association, freespot. net, 'What is Freespot?'
(online text), July 2, 2002,
URL: <http://www.freespot.net/index.html>

[0004]

[Problem to be Solved by the Invention]

10 The prior art technique, however, takes a rather long time,
especially in the case of large data, to pick up a desired content or
desired data after connection to the Internet. The user should
accordingly stay at one free spot until completion of download of
the desired content or data. This is inconvenient to the user who
15 is traveling.

[0005]

For example, it is assumed that the user who waits for a
train at a station having the function of a free spot establishes
connection with the Internet via an access point at the station to
20 acquire a desired content. The user may, however, not complete
download of the desired content prior to boarding, if the train is
coming soon or if the desired content has a large volume. In order
to complete the download, the user is accordingly forced to stay at
the station with an unintentional delay in the schedule.

25 [0006]

The download time of a content at a free spot via the Internet
depends upon the traffic of a broadband line open to general public.
It is accordingly difficult for the user to estimate the download time.
The user may estimate that there is a sufficient time before arrival
30 of the train and establish connection with the Internet. The

transfer rate of data is, however, relatively low beyond expectation, and the download may not be completed before arrival of the train.

SUMMARY OF THE INVENTION

5 [0007]

The object of the present invention is thus to enable a user, who moves with a terminal, to utilize multiple access points located at mutually separate spots and thereby efficiently acquire desired contents and data.

10 [0008]

[Means for Solving the Problem and its Function/Effect]

In order to attain at least part of the above and the other related objects, the present invention is directed to a content reservation and pickup system, where multiple access points as
15 radio relay stations for a wireless LAN are located at multiple spots that are mutually apart from each other, and a radio communication area of each access point is established in a coverage of radio wave transmitted from the access point. In this content reservation and pickup system, when a preset terminal
20 enters a radio communication area of one access point, the preset terminal gains access to the one access point to reserve acquisition of a selected content via the Internet. When the preset terminal enters a radio communication area of another access point, which is different from the one access point, after the reservation, the preset
25 terminal gains access to the another access point to pick up the reserved content.

The one access point includes: an input module that inputs content identification information for identifying the selected content for pickup, location specification information for specifying
30 a location outside the radio communication area of the one access

point as a pickup location of the selected content, and receiver identification information for identifying a person who picks up the selected content, through an access from the preset terminal entering the radio communication area of the one access point; a
5 specification module that retrieves a radio communication area including the location specified by the input location specification information and specifies an access point that covers the retrieved radio communication area as an object access point; and an information transmission module that maps the input receiver
10 identification information to information on the selected content for pickup and transmits the mapped information to the specified object access point via the Internet.

The object access point includes: a storage module that stores the selected content for pickup, which is acquired through an
15 access to a Web server on the Internet based on the content identification information and is mapped to the receiver identification information; an authentication module that requests input of the receiver identification information in response to an access from the preset terminal, and authenticates the access when
20 the input receiver identification information is identical with the stored receiver identification information; and a content transmission module that transmits the selected content, which is stored as mapped to the receiver identification information, to the preset terminal, when the access is authenticated by the
25 authentication module.

[0009]

In the content reservation and pickup system of the present invention, when the preset terminal enters the radio communication area of one access point, the preset terminal gains
30 access to the one access point and reserves acquisition of a selected

content via the Internet. The reservation is made according to the following procedure. The one access point receives from the preset terminal, the content identification information for identifying the selected content for pickup, the location specification information for specifying the pickup location of the selected content, and the receiver identification information for identifying the person who picks up the selected content. The one access point maps the input receiver identification information to the information on the selected content for pickup and transmits the mapped information via the Internet to the object access point, which is specified by the location specification information. The object access point then receives the transmitted information. The content may be a text, an image, a sound, a moving picture, or a combination thereof. The content selected for pickup may be a Web content located on a Web server or a general file received via a network according to a protocol like an FTP. The 'information on the selected content' may be the content identification information, such as a URL of the content, or any other data representing the details of the content.

[0010]

The selected content for pickup is then acquired through an access to a Web server on the Internet, based on the content identification information. Either the one access point or the object access point may have access to the Web server. In the former case, the one access point acquires the selected content, maps data representing the details of the content to the receiver identification information, and transmits the mapped data to the object access point. In the latter case, on the other hand, the object access point gains access to the Web server on the Internet, based on the content identification information received from the one access point, and acquires the selected content for pickup, prior

to a movement of the preset terminal into the radio communication area of the object access point. The latter procedure does not require transmission of the data representing the details of the content from the one access point to the object access point. This
5 desirably reduces the traffic of the line for the Internet.

[0011]

The object access point then stores the acquired content mapped to the receiver identification information. The details of the reserved content are thus registered. When the preset
10 terminal enters the radio communication area of the object access point and gains access to the object access point, the object access point requests input of the receiver identification information, and authenticates the access when the input receiver identification information is identical with the stored receiver identification
15 information. The object access point transmits the selected content, which is stored as mapped to the receiver identification information, to the preset terminal, when the access is authenticated.

[0012]

The user of the preset terminal is planned to move from the
20 radio communication area of one access point to the radio communication area of an object access point. Prior to the movement, the user gains offline access (in the state of no connection with the Internet) from the preset terminal to the one
25 access point and reserves acquisition of a desired content. After the reservation, the access point gains online access (in the state of connection with the Internet) to the Web server to automatically acquire the reserved content. The user picks up the desired content through an offline access to the object access point. This
30 arrangement enables the user to pick up a desired content at a

desired location in a short download time, regardless of the traffic of the line. The pickup is allowed under the condition of the authentication based on the receiver identification information input at the time of reservation. This arrangement effectively prevents the reserved content for pickup from being accessed illegally by any third person and ensures the sufficient security.

[0013]

In the content reservation and pickup system of the present invention, the input module may input hardware inherent information for identifying the preset terminal that picks up the content, instead of the receiver identification information. This arrangement enables the user with the preset terminal used for the reservation to pick up the data representing the details of the selected content, thereby ensuring consolidation of the data.

[0014]

The present invention is also directed to an access point as a radio relay station for a wireless LAN that transmits radio wave of a predetermined frequency and, when a preset terminal enters a radio communication area established in a coverage of the transmitted radio wave, connects the preset terminal to the Internet in response to a predetermined instruction from the preset terminal.

The access point has means for accepting a reservation for acquiring a selected content via the Internet from the preset terminal and means for providing the preset terminal with the reserved content.

The accepting means includes: an input module that inputs content identification information for identifying the selected content for pickup and receiver identification information for identifying a receiver who picks up the selected content, through an

access from the preset terminal entering the radio communication area; and an information transmission module that accepts reservation of the selected content for pickup in response to input by the input module, and transmits the input content identification information and receiver identification information to another access point via the Internet.

The providing means includes: an acquisition module that, in response to input of the content identification information and the receiver identification information transmitted from the another access point, gains access to a Web server on the Internet to acquire the reserved content for pickup based on the input content identification information; a storage module that stores the acquired content, which is mapped to the receiver identification information; an authentication module that requests input of the receiver identification information in response to an access from the preset terminal entering the radio communication area, and authenticates the access when the input receiver identification information is identical with the stored receiver identification information; and a content transmission module that transmits the selected content, which is stored as mapped to the receiver identification information, to the preset terminal, when the access is authenticated by the authentication module.

[0015]

The access point of the present invention accepts reservation for acquiring a selected content, which is sent via the Internet from the preset terminal entering the radio communication area, according to the following procedure. The access point accepts reservation of the selected content for pickup under the condition of input of the content identification information and the receiver identification information. The access point then transmits the

content identification information and the receiver identification information to another access point via the Internet. The access point also provides the preset terminal with the reserved content for pickup according to the following procedure. The access point
5 gains access to the Web server on the Internet, based on the content identification information received from another access point, acquires the reserved content for pickup, and stores the acquired content mapped to the receiver identification information received from the another access point. After the storage, in response to an
10 access from the preset terminal entering its radio communication area, the access point requests input of the receiver identification information and authenticates the access when the input receiver identification information is identical with the stored receiver identification information. The access point transmits the
15 selected content, which is stored as mapped to the receiver identification information, to the preset terminal, when the access is authenticated.

[0016]

The access point of the present invention accepts reservation
20 for acquiring a desired content through an offline access from the preset terminal entering its radio communication area. The access point also provides the preset terminal with the content reserved by the preset terminal in another radio communication area through an offline access from the preset terminal entering its
25 radio communication area. This arrangement enables the terminal to pick up a reserved content at a location, which is different from the location of the reservation, in a short download time, regardless of the traffic of the line. The pickup is allowed under the condition of the authentication based on the receiver
30 identification information input at the time of reservation. This

arrangement effectively prevents the reserved content for pickup from being accessed illegally by any third person and ensures the sufficient security.

[0017]

5 The present invention is further directed to a content reservation and pickup method that locates multiple access points as radio relay stations for a wireless LAN at a first spot and a second spot that are mutually apart from each other. When a preset terminal enters a first radio communication area, which is a
10 coverage of radio wave transmitted from a first access point located at the first spot, the method allows access from the preset terminal to the first access point to reserve acquisition of a selected content via the Internet. When the preset terminal enters a second radio communication area, which is a coverage of
15 radio wave transmitted from a second access point located at the second spot after the reservation, the method allows access from the preset terminal to the second access point to pick up the reserved content.

 The content reservation and pickup method includes the
20 steps of: allowing access from the preset terminal entering the first radio communication area to the first access point, so as to input content identification information for identifying the selected content for pickup, location specification information for specifying a location in the second radio communication area as a pickup
25 location of the selected content, and receiver identification information for identifying a person who picks up the selected content; causing either of the first access point and the second access point to gain access to a Web server on the Internet and acquire the selected content for pickup, based on the input content
30 identification information; causing the second access point to

store the acquired content, which is mapped to the receiver identification information; requesting input of the receiver identification information in response to an access from the preset terminal entering the second radio communication area to the second access point after the storage, and authenticating the access when the input receiver identification information is identical with the stored receiver identification information; and transmitting the selected content, which is stored as mapped to the receiver identification information, to the preset terminal, when the access is authenticated.

[0018]

When the preset terminal enters the first radio communication area, the content reservation and pickup method of the present invention allows access from the preset terminal to the first access point to reserve acquisition of a selected content via the Internet. The method receives from the preset terminal accessing the first access point, the content identification information, the location specification information for specifying a location in the second radio communication area as a pickup location of the selected content, and the receiver identification information. Either the first access point or the second access point gains access to the Web server on the Internet, based on the input content identification information to acquire the selected content. The second access point stores the acquired content mapped to the receiver identification information. After the storage, in response to an access from the preset terminal entering the second radio communication area to the second access point, the method requests input of the receiver identification information and authenticates the access when the input receiver identification information is identical with the stored receiver identification

information. The method transmits the selected content, which is stored as mapped to the receiver identification information, to the preset terminal, when the access is authenticated.

[0019]

5 The user of the preset terminal is planned to move from the first radio communication area to the second radio communication area. Prior to the movement, the user gains offline access from the preset terminal to the first access point and reserves acquisition of a desired content. The user picks up the reserved
10 content through an offline access to the second access point after the movement. This arrangement enables the user to pick up a desired content at a desired location in a short download time, regardless of the traffic of the line. The pickup is allowed under the condition of the authentication based on the receiver
15 identification information input at the time of reservation. This arrangement effectively prevents the reserved content for pickup from being accessed illegally by any third person and ensures the sufficient security.

[0020]

20 The present invention is also directed to a data pickup system, where multiple access points as radio relay stations for a wireless LAN are located at multiple spots that are mutually apart from each other, and a radio communication area of each access point is established in a coverage of radio wave transmitted from
25 the access point.

 In the data pickup system, when a preset terminal enters a radio communication area of one access point, the preset terminal gains access to the one access point to set a storage space for data acquired via a communication line, in a memory device connecting
30 with another access point, which is different from the one access

point. When the preset terminal enters a radio communication area of the another access point after the setting, after the reservation, the preset terminal gains access to the another access point to pick up the data stored in the storage space.

5 The one access point includes: an input module that inputs location specification information for specifying a location outside the radio communication area of the one access point as a pickup location of the data and receiver identification information for identifying a person who picks up the data, through an access from
10 the preset terminal entering the radio communication area of the one access point; a specification module that retrieves a radio communication area including the location specified by the input location specification information and specifies an access point that covers the retrieved radio communication area as an object access
15 point; and an information transmission module that transmits the input receiver identification information to the specified object access point.

 The object access point includes: a storage space setting module that sets a storage space to store the receiver identification
20 information and data mapped to the receiver identification information and acquired via the communication line, in a memory device connecting with the object access point; an authentication module that requests input of the receiver identification information in response to an access from the preset terminal,
25 and authenticates the access when the input receiver identification information is identical with the stored receiver identification information; and a data transmission module that transmits the data, which is stored in the storage space as mapped to the receiver identification information, to the preset terminal, when the
30 access is authenticated by the authentication module.

[0021]

When the preset terminal enters the radio communication area of one access point, the data pickup system of the present invention allows access from the preset terminal to the one
5 access point, in order to set the storage space for data acquired via the communication line, in the memory device connecting with another access point, which is different from the one access point. The storage space is set according to the following procedure. The one access point receives the location specification information for
10 specifying the location outside its radio communication area as a pickup location of the data and the receiver identification information from the preset terminal accessing the one access point, and sends the input receiver identification information to the object access point specified by the input location specification
15 information. The object access point receives the receiver identification information, stores the receiver identification information in the memory device connecting with the object access point, and sets the storage space for data acquired via the communication line and mapped to the receiver identification
20 information. After setting of the storage space, in response to an access from the preset terminal to the object access point, the system requests input of the receiver identification information and authenticates the access when the input receiver identification information is identical with the stored receiver identification
25 information. The system transmits the data, which is mapped to the receiver identification information and is stored in the storage space, to the preset terminal, when the access is authenticated.

[0022]

The user of the preset terminal is planned to move from the
30 radio communication area of one access point to the radio

communication area of an object access point. Prior to the movement, the user gains offline access from the preset terminal to the one access point and sets the storage space for data acquired via the communication line, in the memory device connecting with the object access point. The user receives the data stored in the storage space through an offline access to the object access point after the movement. This arrangement enables the user to pick up required data at a desired location in a short download time, regardless of the traffic of the line. The pickup is allowed under the condition of the authentication based on the receiver identification information input at the time of reservation. This arrangement effectively prevents the data stored in the storage space from being accessed illegally by any third person and ensures the sufficient security.

The above and other objects, features, aspects, and advantages of the present invention will become more apparent from the following detailed description of the preferred embodiment with the accompanying drawings.

[0023]

[Embodiments of the Invention]

One mode of carrying out the present invention is discussed below in the following sequence:

A. Embodiment (Web Content Reservation and Pickup System KH)

A-1. General Construction of Web Content Reservation and Pickup System KH

A-2. Series of Processing Executed by Access Points 20 and 120

A-3. Functions and Effects

B. Modified Examples

[0024]

A. Embodiment

A-1. General Construction of Web Content Reservation and Pickup System KH

Fig. 1 shows the outline of a Web content reservation and pickup system KH (hereafter referred to as reservation-pickup system KH) in one embodiment of the present invention. The reservation-pickup system KH reserves acquisition of a selected content at a spot X1 (for example, at a railway station in Yokohama city) and picks up the reserved content at another spot X2 (for example, at a hotel in Osaka city), which is apart from the spot X1. The content may be a text, an image, a sound, a moving picture, or a combination thereof. The content selected for pickup may be a Web content located on a Web server as an object of transfer, a file received via a network according to a protocol like an FTP, or manually transferred data. In this embodiment, the content is a Web content on a server connecting with the Internet IN. The embodiment regards a technique of acquiring the Web content via the Internet IN.

[0025]

As shown in Fig. 1, an access point (radio base station) 20 working as a radio relay station for a wireless LAN is located in a first communication area AR1, which covers the spot X1. The access point 20 is the radio relay station in conformity with the IEEE802. 11b standard and has a maximum baud rate of 11 Mbps. The access point 20 is constructed to transmit and receive radio wave having a frequency of 2.4 GHz. In the system of Fig. 1, the first communication area AR1 represents a coverage of radio wave transmitted from the access point 20 (radio communication area). Setting the access point 20 constructs a wireless LAN having the radio communication area equal to the first communication area

AR1.

[0026]

A terminal 50 or a computer entering the first communication area AR1 establishes wireless communication with the access point 20 via transmission of radio wave between a wireless LAN adapter 52 attached to the terminal 50 and the access point 20. The access point 20 and the wireless LAN adapter 52 are capable of freely converting the data format from a computer processible format to a radio wave format and vice versa. This allows for offline (in the state of no connection with the Internet) data transmission between the terminal 50 and the access point 20.

[0027]

A hub 64 functioning as a cable allotter of a wired LAN is connected to a LAN port 22 of the access point 20 via an Ethernet (registered trademark) cable 65. Connection of the hub 64 with the access point 20 establishes a first LAN, which is the fusion of the wireless LAN and the wired LAN, in the first communication area AR1.

[0028]

A terminal 60 or a computer with an adapter 62 in conformity with the Ethernet standard establishes wired communication with the access point 20 via Ethernet cables 65 and 66 by connecting the adapter 62 with a port of the hub 64 located in the first communication area AR1 via the Ethernet cable 66. This allows for offline data transmission between the terminal 60 and the access point 20.

[0029]

In the illustration of Fig. 1, the terminal 50 and 60 are book-type personal computers. This is, however, not restrictive at all, and a personal digital assistant, a portable computer, or any

other equivalent device is applicable for each of the terminals 50 and 60.

[0030]

As shown in Fig. 1, a router 28 with a built-in modem is connected to a WAN port 24 of the access point 20 via a cable. The router 28 identifies the terminal 50 or 60 in the first LAN, based on an identification number (MAC address) intrinsic to the adaptor 52 or 62 attached to each terminal 50 or 60.

[0031]

The built-in modem of the router 28 is connected to the Internet IN via a broadband communication line CL, such as a CATV line or an xDSL line, and an exclusive line of a provider PV. The router 28 accordingly functions as a gateway to connect the first LAN with the Internet IN. This enables each of the general public in the first communication area AR1 to connect the own terminal to the Internet IN via the access point 20 and acquire various contents stored in a Web server SV on the Internet IN. Namely the first communication area AR1 works as the free spot described previously.

[0032]

An access point 120, which has the structure similar to that of the access point 20, is located in a second communication area AR2, which covers the spot X2. A router 128, a hub 164, and Ethernet cables 166 and 165 connecting with the access point 120 directly or indirectly have the structures similar to those of the router 28, the hub 63, and the Ethernet cables 66 and 65 discussed above. As n the first communication area AR1, a second LAN, which is the fusion of a wireless LAN and a wired LAN, is accordingly established in the second communication area AR2. In the illustration of Fig. 1, the terminals 50 and 60, the wireless

LAN adapters 52, and the adapter 62 in the second communication area AR2 are shown by the two-dot chain line. This shows that the terminals 50 and 60 in the first communication area AR1 move to the second communication area AR2.

5 [0033]

As in the case of the access point 20, a WAN port 124 of the access point 120 is connected to the Internet IN via the router 128, a communication line CL, and an exclusive line of a provider PV. The router 128 accordingly functions as a gateway to connect the
10 second LAN with the Internet IN. This enables each of the general public in the second communication area AR2 to connect the own terminal to the Internet IN via the access point 120 and acquire various contents stored in a Web server SV on the Internet IN. Namely the second communication area AR2 works as the free spot
15 described previously.

[0034]

The router 128 in the second LAN 128 is linked with the router 28 in the first LAN via the Internet IN. This allows for online (in the state of connection with the Internet) data
20 transmission between the access point 120 and the access point 20.

[0035]

The access point 20 has a controller 21 including a CPU, a ROM, and a RAM and a memory device 23 for storing data therein. The controller 21 executes various series of processing that relate
25 to offline data transmission in the first LAN and online data transmission to and from the access point 120. The memory device 23 stores the results of the processing executed by the controller 21 as data. The access point 120 has a controller 121 and a memory device 123, which have the same functions as those of the controller
30 21 and the memory device 23.

[0036]

The controller 121 executes various series of processing that relate to offline data transmission in the second LAN and online data transmission to and from the access point 20. The memory
5 device 123 stores the results of the processing executed by the controller 121 as data. The controller 21 or 121 and the memory device 23 or 123 may not be built in the access point 20 or 120, but may be connected to the access point 20 or 120 by air or by a cable. For example, an external memory device 23 or 123 may be linked
10 with the access point 20 or 120 via a cable or the like.

A-2. Series of Processing Executed by Access Points 20 and 120

[0037]

The details of the characteristic processing executed by the
15 controllers 21 and 121 in the access points 20 and 120 are discussed below with reference to Fig. 2.

[0038]

The user of the terminal 50 or 60 in the first communication area AR1 operates the terminal 50 or 60 and inputs information for
20 identifying a selected Web content for pickup (hereafter referred to as content identification information) and information for specifying a location outside the first communication area AR1 as a pickup location of the Web content (hereafter referred to as location specification information) into the terminal 50 or 60. The
25 terminal 50 or 60 encrypts the input content identification information and location specification information with WEP (wired equivalent privacy) keys and transmits the encrypted content identification information and location specification information to the access point 20 via the first LAN. In this
30 embodiment, the terminal 50 at the spot X1 (for example, AA

railway station in Yokohama city) in the first communication area AR1 transmits the 'URL (uniform resource locator) of the selected Web content' as the content identification information and the 'name of the second spot X2' (for example, BB hotel in Osaka city) as the location specification information to the access point 20.

[0039]

When the access point 20 receives the content identification information and the location specification information, the controller 21 issues an ID and a password inherent to the content identification information and the location specification information, encrypts the ID and the password with WEP keys, and transmits the encrypted ID and password to the terminal 50 or 60. The ID and the password are used as information for identifying a receiver who picks up the Web content (hereafter referred to as receiver identification information). Information other than the ID and the password, for example, the MAC address of the adapter 52 or 62 attached to the terminal 50 or 60, may be used to identify the receiver who picks up the Web content.

[0040]

After the issuance of the receiver identification information, (1) the controller 21 maps the received content identification information and location specification information to the receiver identification information and inputs the mapped information (information input process). This process accepts reservation for acquiring a Web content selected by the user of the terminal 50 or 60.

[0041]

A series of processing is subsequently executed to provide the user of the terminal 50 or 60 with the reserved Web content.

(2) The controller 21 first refers to an area map and specifies an

access point of providing the terminal 50 or 60 with the reserved content (hereafter referred to as pickup access point), based on the input location specification information (pickup point specification process). The area map represents geographical information showing radio communication areas as free spots in various regions and access points covering the radio communication areas. When the name of the spot X2 'BB hotel in Osaka city' is input as the location specification information, the controller 21 specifies the location of the BB hotel on the area map and then specifies a radio communication area including the BB hotel and an access point covering the radio communication area. In this embodiment, the BB hotel is located in the second communication area AR2 of the access point 120, and the pickup access point is specified as '120', which is the code number allocated to the access point 120.

[0042]

(3) The controller 21 subsequently maps the input receiver identification information to the content identification information, encrypts the mapped information with WEP keys, and transmits the encrypted information via the Internet IN to the access point 120 specified as the pickup access point (transmission process).

[0043]

(4) When the access point 120 receives the receiver identification information and the content identification information, the controller 121 inputs and stores the receiver identification information and the content identification information into a storage table MA in the memory device 123 (identification information input and storage process). Each Web content to be provided to the user of the terminal 50 or 60 by the access point 120 is mapped to the receiver identification information and is written in the storage table MA. In the

example of Fig. 2, the input receiver identification information (ID: tokkyo, password: ***) is mapped to the input content identification information (<http://www.>) and is recorded in an identification information column of the storage table MA.

5 [0044]

(5) The controller 121 subsequently gains access to the Web server SV on the Internet IN, based on the URL as the content identification information, and fetches a content A corresponding to the URL (content fetch process). (6) The controller 121 then stores
10 data representing the details of the fetched content A into a data column of the storage table MA corresponding to the URL (content storage process). These steps acquire the Web content reserved by the user of the terminal 50 or 60 and store the data representing the details of the acquired Web content as mapped to the receiver
15 identification information.

[0045]

The series of processing (2) through (6) (pickup point specification process, transmission process, identification information input and storage process, content fetch process, and
20 content storage process) is executed immediately after conclusion of the information input process by the controller 21. The processing is accordingly completed before the user of the terminal 50 or 60 who has reserved a desired Web content at the spot X1 reaches the spot X2. The controller 121 waits for pickup of the data
25 representing the Web content A by the user of the terminal 50 or 60.

[0046]

(7) When the user of the terminal 50 or 60 moves from the spot X1 to the spot X2, the terminal 50 or 60 enters the second communication area AR2. In response to an access from the
30 terminal 50 or 60 to the access point 120 for pickup of the reserved

Web content, (8) the controller 121 requests the terminal 50 or 60 to input of the receiver identification information (ID and password) issued at the time of reservation of the Web content (receiver identification information input process). (9) The controller 121
5 inputs the ID and the password encrypted with the WEP keys and transmitted from the controller 21, and authenticates the access when the input ID and password are identical with the ID and the password stored in the storage table MA (receiver authentication process). (10) Only when the access is authenticated, the
10 controller 121 refers to the storage table MA, encrypts the data, which represent the details of the Web content and have been stored as mapped to the ID and the password, with WEP keys, and transmits the encrypted data to the terminal 50 or 60 (content transmission process). In the example of Fig. 2, only in response
15 to input of the ID 'tokkyo' and the password '****', the data representing the details of the Web content A are transmitted to the terminal 50 or 60.

[0047]

A-3. Functions and Effects

20 The user of the terminal 50 or 60 located in one free spot (first communication area AR1) is planned to move to another free spot (second communication area AR2). In the Web content reservation and pickup system KH of the embodiment discussed above, prior to the movement, the user of the terminal 50 or 60
25 gains offline (in the state of no connection with the Internet) access to the access point 20 in one free spot to reserve acquisition of a desired Web content. After the reservation, the access point 120 gains online (in the state of connection with the Internet) access to the Web server to automatically acquire the reserved Web content.
30 The user picks up the reserved Web content through an offline

access to the access point 120 in another free spot after the movement. This enables the user to pick up a desired Web content at a desired location in a short download time, regardless of the traffic of the line. The pickup is allowed under the condition of the authentication based on the receiver identification information issued or input at the time of reservation. This arrangement effectively prevents the reserved Web content for pickup from being accessed illegally by any third person and ensures the sufficient security.

[0048]

In the system of the above embodiment, the access point 120, which provides the user of the terminal with the reserved Web content after movement, executes the content fetch process. There is accordingly no necessity of transmitting data representing the details of the reserved Web content from the access point 20 to the access point 120. This desirably reduces the traffic of the exclusive line for the Internet.

[0049]

B. Modified Examples

In the system of the above embodiment, the access point 120, which provides the user of the terminal with the reserved Web content after movement, executes the content fetch process. The content fetch process may, however, be executed by a device connectable to the Internet IN, other than the access point 120.

Fig. 3 shows a first modified example, where the access point 20, which accepts reservation of a desired Web content by the user of the terminal prior to the movement, executes the content fetch process. In this modified system, (3) the controller 21 of the access point 20 gains access to the Web server SV on the Internet IN based on the URL as the content identification information and

fetches the content A corresponding to the URL (content fetch process). (4) The controller 21 subsequently maps data of the fetched content A to the input receiver identification information and content identification information, and transmits the mapped data to the access point 120 via the Internet IN (transmission process).

[0050]

In the system of the above embodiment, the user operates the own terminal 50 or 60 to input the content identification information for identifying a desired content into the terminal 50 or 60. In one possible modification, the user does not input the content identification information but inputs only the location specification information. The access point 20 inputs the location specification information and the receiver identification information and sets a storage space for data, which are acquired via the Internet IN, in the memory device 123. This configuration is shown in Fig. 4 as a second modified example.

[0051]

In the system of the second embodiment, the user of the terminal 50 or 60 is not required to give an instruction regarding the details of the desired data to the access point 20. In response to specification of the pickup location and identification of the receiver who picks up data, the access point 120 executes a storage space setting process to set a storage space for each user's data (an area filled with downward-sloping hatched lines in Fig. 4) in the storage table MA in the memory device 123 connecting with the access point 120. Although not being specifically shown in Fig. 4, when the storage space is set in the memory device 123, a management number is allocated to the storage space (hereafter referred to as space management number). The controller 21 of

the access point 20 transmits the space management number allocated to the storage space to the terminal 50 or 60.

[0052]

After setting the storage space, while the user of the
5 terminal 50 or 60 moves, an arbitrary access point 220 gains access to the access point 120 via the Internet IN to fetch data stored in a server SV1 (may be or may not be Web server) on the Internet IN. The fetched data are then stored in the storage space. The user of the terminal 50 or 60 gains offline access to the access point 120
10 after the movement to pick up the data stored in the storage space.

[0053]

Although not being specifically shown in Fig. 4, prior to fetch of data from the server SV1, a controller in the access point 220 executes, in response to an instruction from the terminal, either an
15 authentication process with the password and the ID in a similar manner to the process (8) and (9) shown in Fig. 2 or an authentication process with the space management number. The former authentication process is carried out, when the password and the ID are transmitted from the terminal to the access point
20 220. The latter authentication process is carried out, when the space management number is transmitted from the terminal to the access point 220. On completion of the former authentication, the access point regards the access as an access from the legal user of the terminal and allows the terminal to write acquired data into
25 the storage space and read data stored in the storage space. On completion of the latter authentication, on the other hand, the access point regards the access as an access from a representative of the legal user of the terminal and allows the terminal to write acquired data into the storage space but forbids the terminal to
30 read data stored in the storage space.

[0054]

For example, it is assumed that a director of a certain office who is the user of the terminal 50 or 60 can not specify the details of desired data at the spot X1 prior to a movement. When the
5 director specifies a pickup location of the desired data and transmits the location specification information to the access point 20, the access point 20 issues an ID, a password, and a space management number. A storage space for the director is then set in the access point 120, to which the director moves. The director
10 then informs a secretary of 'the presence of the storage space set in the access point 120', 'the space management number allocated to the storage space', and 'the instruction of storing data required for a tomorrow's meeting into the storage space'. The secretary searches for the required data and gains access from a terminal 70
15 to the access point 220 with the space management number to write the required data into the storage space, for example, according to a procedure of file transfer via the Internet. After the movement, the director downloads the required data through an offline access to the access point 120. The secretary who uses the space
20 management number for the access can not access the data stored in the storage space. This arrangement desirably keeps the director's privacy. In this structure, the data may be transmitted via an exclusive line, instead of the Internet. This attains the higher security level than that of the Internet open to the general
25 public. A virtual private network (VPN) established on a network, such as the Internet, may be utilized for the data transfer. Diverse protocols, such as HTTP, FTP, and TELNET used in the Internet, are applicable for the data transfer. In the case of a network other than the Internet, any protocol usable on the
30 network is applicable for the data transfer.

[0055]

The above embodiment and its modified examples are to be considered in all aspects as illustrative and not restrictive. There may be many modifications, changes, and alterations without departing from the scope or spirit of the main characteristics of the present invention. All changes within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

[0056]

The embodiment and its modified examples discussed above use the ID and the password for authentication and determine whether or not a person who has reserved a Web content is identical with a person who is going to pick up the reserved Web content. Information for identifying a terminal that picks up the reserved Web content (for example, a MAC (media access control) address as an ID number intrinsic to the wireless LAN adapter 52 or the adapter 62) may be used for the authentication, instead of the ID and the password. This modified system changes (1) the information input process, (3) the transmission process, (4) the identification information input and storage process, (8) the receiver identification information input process, and (9) the receiver authentication process shown in Fig. 2 to the processes discussed below.

[0057]

(1) When the access point 20 receives the content identification information and the location specification information from the terminal 50 or 60, the controller 21 reads and inputs the MAC address of the wireless LAN adapter 52 or the adapter 62 based on the received information. (3) The controller 21 maps the MAC address to the content identification information

and sends the mapped information to the access point 120 via the Internet IN. (4) When the access point 120 receives the MAC address and the content identification information, the controller 121 inputs and stores the MAC address and the content
5 identification information into the storage table MA in the memory device 123. (8) In response to an access for pickup of the reserved Web content from the terminal 50 or 60 to the access point 120, the controller 121 reads the MAC address of the wireless LAN adapter 52 or the adapter 62 and (9) authenticates the access when the read
10 MAC address is identical with the MAC address stored in the storage table MA.

[0058]

This arrangement enables the terminal 50 or 60 used for the reservation to pick up data representing the details of the Web
15 content and thereby ensures consolidation of data management. This arrangement also saves the labor of the user. The user of the terminal 50 or 60 is not required to input the ID and the password through operations of the terminal 50 or 60 at the time of reservation and at the time of data pickup.

20 [0059]

In the above embodiment, the geographic names in Japan are used as the example of the spot X1 in the first communication area AR1 and the spot X2 in the second communication area AR2. The Internet IN is the worldwide network mutually connecting a large
25 number of computer networks all over the world via exclusive lines. The spots X1 and X2 may thus be any two different places in any state or country or any two different places in any two different states and countries. Namely the user can reserve a desired content at a free spot in one country, for example, Japan, and pick
30 up the reserved content at a free spot in another country, for

example, the USA.

[BRIEF DESCRIPTION OF THE DRAWINGS]

5 [Fig. 1] a schematic diagram showing the outline of a Web content reservation and pickup system KH in one embodiment of the present invention;

[Fig. 2] a schematic diagram showing series of processing executed by controllers 21 and 121 of access points 20 and 120;

[Fig. 3] a schematic diagram showing a first modified example; and

10 [Fig. 4] a schematic diagram showing a second modified example.

[DOCUMENT NAME]

ABSTRACT

[ABSTRACT]

[OBJECT] To enable a user moving with a terminal to utilize multiple access points located at mutually separate spots and thereby efficiently acquire a desired Web content.

[SOLUTION] The user of a terminal 50 or 60 moves from one free spot (first communication area AR1) to another free spot (second communication area AR2). Prior to the movement, the user of the terminal 50 or 60 gains offline access to an access point 20 in the first communication area AR1 and reserves acquisition of a desired Web content. The access point 20 accepts the reservation and transmits reservation information to another access point 120 in the second communication area AR2. The access point 120 gains online access to a Web server based on the received reservation information and acquires the reserved Web content. After the move, the user of the terminal 50 or 60 gains offline access to the access point 120 and picks up the desired Web content.

[SELECTED FIGURE]

Fig. 1

Fig.1

KH

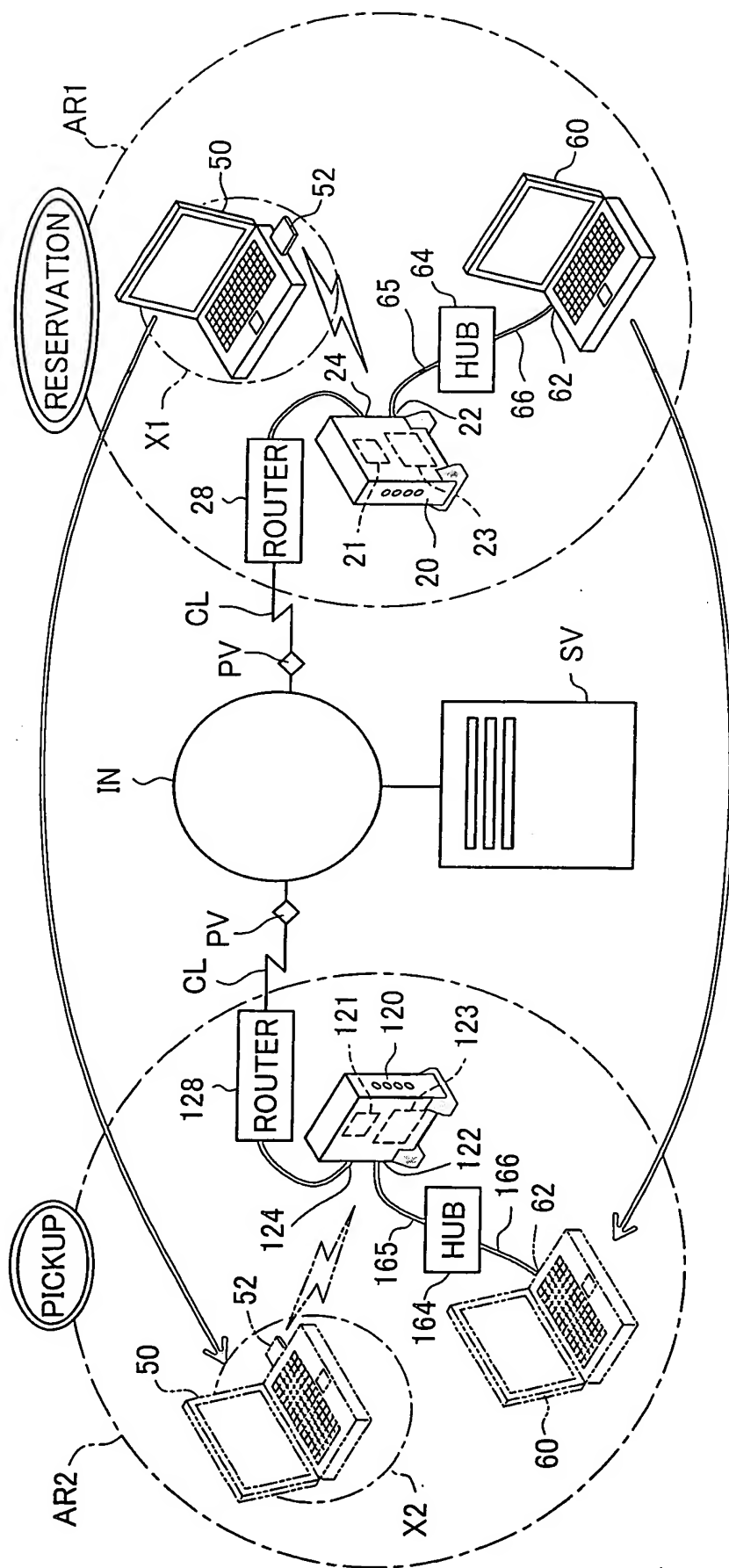


Fig.2

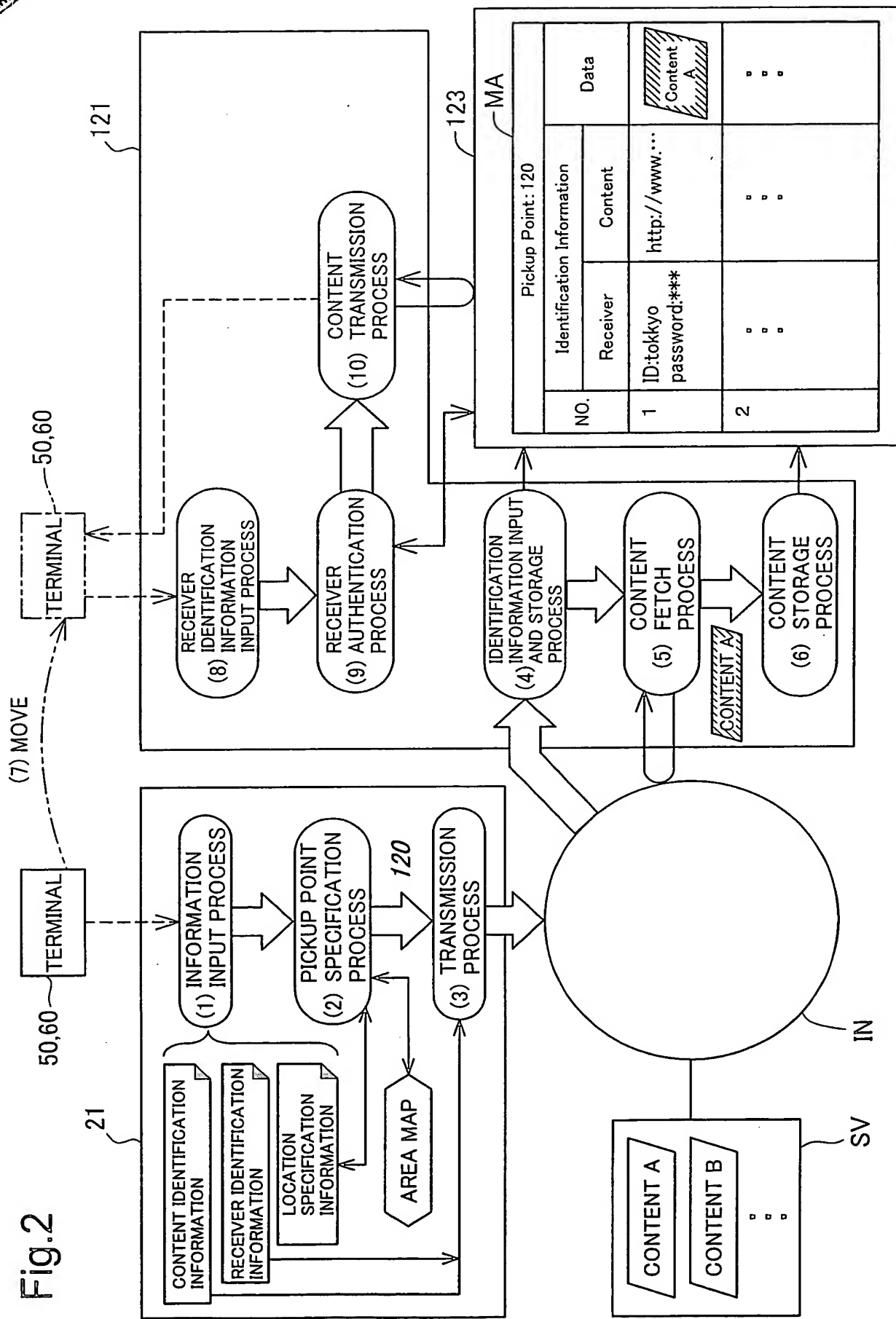


Fig.3

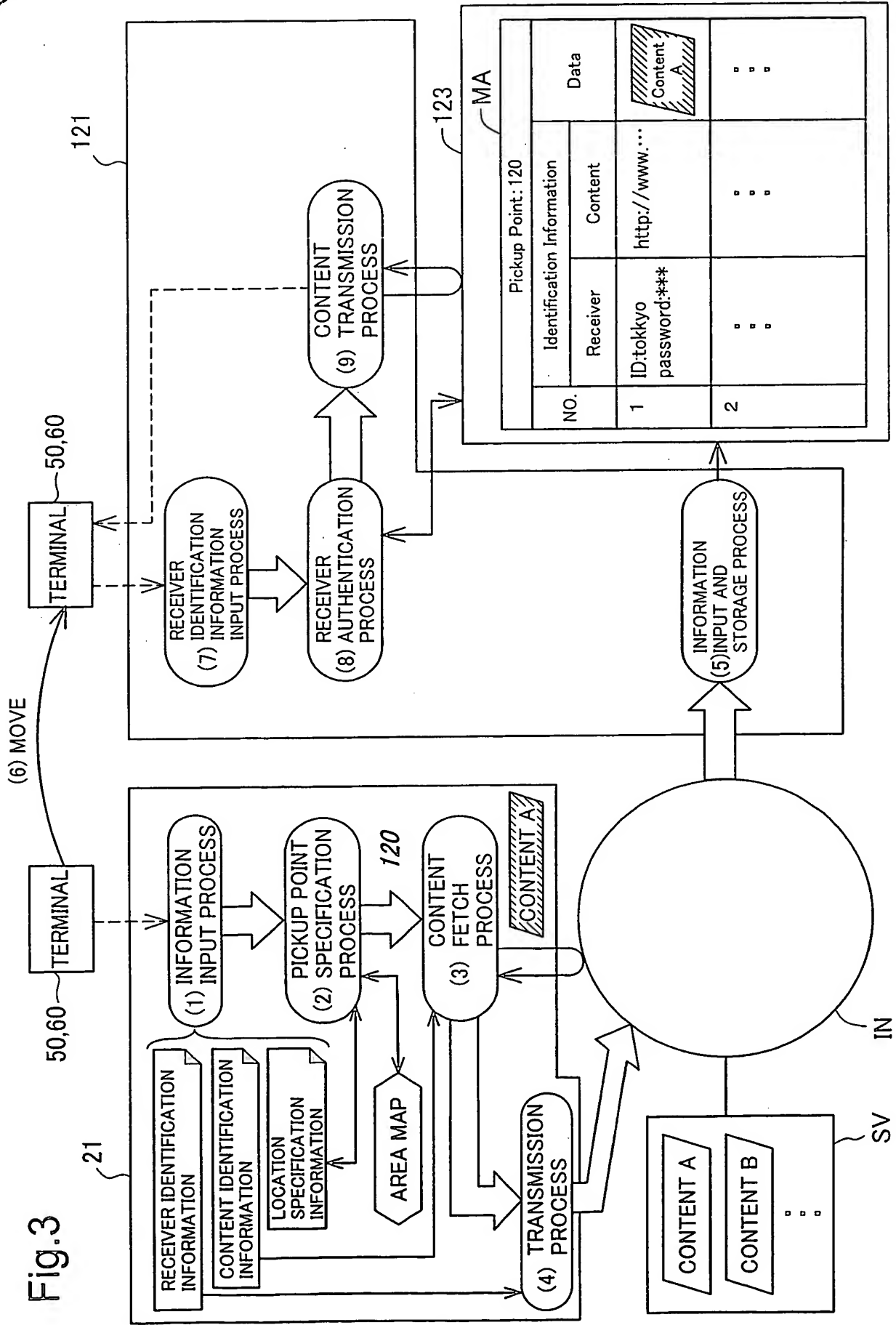


Fig.4

